Chief, Protected Resources Division
National Marine Fisheries Service - F/NWO3
1201 NE Lloyd Boulevard, Suite 1100
Portland, Oregon 97232-1274

February 2, 2006

A. **Title**:

Application for Permit for Scientific Purposes under the Endangered Species Act of 1973.

B. **Species:** List all species and/or populations and/or Evolutionarily Significant Units (ESUs) for which you request take authority.

Chinook salmon
(*Oncorhynchus tschawystcha*)
Puget Sound ESU

Chinook salmon
(*Oncorhynchus tschawystcha*)
Lower Columbia ESU

Coho salmon
(*Oncorhynchus kisutch*)
Lower Columbia ESU

Rainbow trout/Steelhead
(*Oncorhynchus mykiss*)
Lower Columbia River ESU

C. **Date of Permit Application**: Date you are sending the application.
2/14/06.

D. **Applicant Identity:** The applicant is the individual and/or agency responsible for ensuring compliance with permit conditions, and may represent a group of individuals actually performing the activities (e.g., employees, partners, agents, and/or contractors). Please include the following information about the permit applicant:

1. Applicant's name and position title;
Steve Corbett
Fishery Biologist

2. Institution or agency name;
National Park Service
Olympic National Park

3. Mailing address
600 East Park Avenue
Port Angeles WA 98362

4. Telephone and Fax number; and E-mail address.

(360) 565-3086
Fax (360) 565-3070
Steve_Corbett@nps.gov

E. **Information on Personnel, Cooperators, and Sponsors.** (If the same person or entity will hold several roles, you may state their address information once and refer back to it).

1. If the applicant will not be the sole person conducting the proposed activities, provide the names, phone numbers, and résumés for each Principal Investigator and Field Supervisor. A Principal Investigator is ultimately responsible for the project and compliance with the permit conditions. A Field Supervisor (who may also be the Principal Investigator), is anyone who supervises or carries out the activities in the field without supervision, and will also be responsible for compliance with the permit conditions.

Principal Investigator
Sam Brenkman, Fishery Biologist, 600 East Park Avenue, Port Angeles, WA 98362; 360 565 3081; fax: 360 565 3070; sam_brenkman@nps.gov
Professional Background
Fisheries Management, Aquatic Monitoring, Conservation of Threatened and Endangered Fishes, and Habitat Conservation Planning
Academic Experience
Master of Science and Bachelor of Science, Fisheries
Work Experience
Supervisory Fisheries Biologist, National Park Service, Olympic National Park. 2003 to present.
Fisheries Biologist, National Park Service, Olympic National Park, WA. 2001-2003.
Fishery Biologist, National Marine Fisheries Service, Lacey, WA. 1998-2001.
Research Assistant, Oregon State University. 1995-1998.
Research Biologist, Holar College, Iceland. 1997.
Fisheries Technician with Olympic National Park, Crater Lake National Park, and Oregon Department of Fish and Wildlife. 1990-1996.

Field Supervisors:

Phil Kennedy
Work Experience
Fishery Biologist, Olympic National Park 2002-Present
Fisheries Technician, Domsea Fish Farms, Manchester WA. 1994-1998

Steve Corbett
Academic Background:
Bachelor of Science Fishery, Resources, University of Idaho
Work Experience:
Fishery Biologist, Olympic National Park, Washington. 2003 to present
Microbiologist, National Marine Fisheries Service-Northwest Fisheries Science Center. 2002-2003
Fisheries Technician, Olympic National Park. 1999-2002
Fish Taxonomist, Dynamac Corporation. 1998

Research Assistant, Oregon Cooperative Fisheries Research Unit. 1998
Fisheries Technician, United States Forest Service-Kootenai National Forest. 1997
Fisheries Technician, University of Idaho-Fish and Wildlife Cooperative Unit. 1996-1997
Fisheries Technician, University of Idaho-Department of Fish and Wildlife. 1994-1997

2. To the extent possible, provide a list of field personnel.

Field Personnel
1-2 to be hired seasonal Fisheries Technicians.
Additional personnel that may assist field work:
Chris Glenney
Pat Crain

3. Please identify the secured or proposed funding source(s) for the proposed activities, including names, addresses, and phone numbers of the sponsors, cooperating institutions, etc.

National Park Service, Long Term Ecological Monitoring funds, Sam Brenkman, 600 East Park Avenue, Port Angeles, WA 98362, 360-565-3081, NPS.

4. If the proposed activities will be conducted by a contractor, provide a statement that a qualified member of your staff (include name(s) and qualifications) will supervise or observe the taking. Include a copy of the proposed contract or a letter from the contractor indicating agreement to operate under any and all permit conditions, should a permit be granted.

N/A

5. Provide a description of the arrangements for the disposition of any tissue samples, dead specimens, or other remains, either in a museum or other institution, for the continued benefit to science. Include the list of researchers, laboratories, museums, and/or institutional collections that would receive these tissue samples or specimens. Please include name, address, contact, and phone number for each.

No lethal sampling will occur.

6. For transport and long-term holding of listed species, please provide the qualifications and experience of all staff responsible for care without supervision, including a written certification from a licensed veterinarian knowledgeable about the requested species (or similar species), or from a recognized expert on the species (or similar species) that he/she has personally reviewed the criteria for transporting and maintaining the animal(s) and that in his/her opinion they are adequate to provide for the well-being of the animal. Include the name and phone number of this veterinarian, consulting expert, or equivalent who will be available during the proposed activities.

N/A

F. **Project Description, Purpose, and Significance:** Please describe the purpose of your study or project. If available, please attach a copy of the formal project proposal or contract, including the contract number, to your application. You may reference the appropriate section of the proposal/contract in response to a particular question.

Determine relative abundance, species composition, size and age structure, and presence/non detection of fish species that inhabit selected systems within Mount Rainier National Park. We intend to conduct day snorkel surveys and electrofishing to evaluate changes in fish community composition and abundance over time.

1. A justification of the objective(s): motivation, history, goals, etc., and how the wild populations of the species will benefit from the proposed activities;

The river monitoring protocol is designed to provide an understanding of reference conditions and trends in fish and macroinvertebrate assemblages that will provide information critical to management and conservation of native species in national parks. This protocol will allow park managers to detect trends in: number of fish species increasing and decreasing in abundance; extent of non-native fish invasions; extent of hatchery salmon and steelhead invasions; whether fish species become extirpated from park rivers; magnitude of abundance of each fish species; whether there are changes in timing of migration of adult fishes and changes in emergence timing of salmonid fry; and overall changes in fish species composition within a river.

2. A statement of whether the proposed project or program responds directly or indirectly to a recommendation or requirement of a Federal agency (Include citations if applicable);

N/A

3. A statement of whether the proposed project or program has broader significance than the individual project's goals, or is part of a larger scale research management or restoration plan (Include citations if applicable);

The overarching goal of National Park Service Inventory and Monitoring Program is for parks to serve as benchmarks or reference sites and provide an early warning detection system. The long-term goals for the national program are to: 1) develop long-term monitoring programs efficiently and effectively monitor ecosystem status and trends over time at various spatial scales; 2) apply field data aid park managers in identifying alternative management actions, assessing trade-offs, and evaluating outcomes; 3) actively cooperate with other federal and state agencies to share resources, achieve common goals, and avoid unnecessary duplication of effort and expense. When fully operational, monitoring programs will provide important feedback between natural resource condition and management objectives.

4. A description of any relationships or similarities of the proposed activities to other proposed or ongoing projects and programs, and whether the potential exists to cooperate and coordinate with other similar studies or activities. (Include citations if applicable).

The proposed project is directly related to ongoing fisheries research at Olympic National Park. The two projects are well coordinated, and no incidental take permit is needed for work at Olympic National Park.

5. A justification for using listed species in the study or activities, and a discussion of possible alternatives to using listed species and/or to using the proposed methods. If applicable, you should try to anticipate alternative scenarios due to circumstances such as changes in environmental conditions, annual variations in species abundance, necessary changes in proposed procedures, etc. Such scenarios should be addressed in **Description and Estimates of Take** below if they affect the nature or amount of potential take of listed species. This planning may avoid the potentially lengthy process of modifying the permit.

Listed fish species are believed to be an integral component of the fish community in rivers in Mount Rainier National Park. We intend to employ passive snorkeling techniques and backpack electrofishing. We intend to follow NOAA Fisheries and Olympic National Park Backpack Electrofishing Guidelines.

G. **Project Methodology:** Please provide a detailed description of the project, or program, in which the listed species is to be used, including:

We intend to conduct electrofishing and day snorkeling to determine detection, non detection, and relative abundance of bull trout and other fish species. Single pass electrofishing will be conducted by up to three surveyors moving upstream using battery powered backpack electrofishing equipment and dip nets to capture, identify, measure for total length and release fish. Single pass day snorkel surveys will be conducted by up to three surveyors moving downstream identifying, counting and estimating total length of all observed fish.

1. The proposed duration of the project or program, including start and end dates.

Start Date: June 1, 2006
End Date: October 1, 2010

2. A discussion of the procedures and techniques which will be used during the project. The discussion should include, at a minimum:

a. Method(s) of capture and of release;

Backpack electrofishing. Capture individuals with dipnets and release upon identification and total length measurement.

b. A description of any tags, including the attachment method, location, and expected duration of tag attachment;

N/A.

c. A description of type and dosage of any drugs to be used, purpose of use, and method of application;

N/A.

d. Temporary holding time prior to release of the individual(s) and the manner in which they will be detained (for transport and long-term holding, please fill out the section on **Transport and Holding**); and

Individuals to be held in a view tube long enough to identify and measure for total length. Individuals to be held no longer than 3 minutes.

e. Number and types of samples to be taken from each individual, including sampling protocol.

N/A

3. A discussion of the potential for injury or mortality to the species involved, and the steps that will be taken to minimize adverse effects and to ensure that the species will be taken in a humane manner.

When misused, electrofishing methods may incidentally injure or kill Chinook salmon (i.e. electrofishing.) The goal is to achieve zero mortality and no injuries to captured fish. All electrofishing will be conducted by highly trained and experienced biologists and in accordance with Olympic National Park Electrofishing Guidelines and NMFS Electrofishing Guidelines.

H. **Description and Estimates of Take**: Issued permits define a specific number of individuals of each species that can be taken within the approved study or project. You must provide sufficient detail (in the table or in narrative) for NMFS to determine the species, population group, and estimated number of individuals to be "taken" due to each activity. You should also describe the specific age, size, (and sex, if appropriate) of the listed species targeted. Please take into account alternative scenarios identified above in **Project Description, Purpose, and Significance.**

The description of the listed species to be taken during the proposed activities should include the following:

See anticipated annual take table.

1. A list of each species and/or population and/or Evolutionarily Significant Unit to be taken including the common and scientific name. Include specific population or sub-population groups if appropriate.

The following ESA listed species may be encountered during sampling:
Puget Sound ESU Chinook salmon (*Oncorhynchus tschwytscha*)
Lower Columbia River ESU Chinook salmon (*Oncorhynchus tschwytscha*)
Lower Columbia River ESU Coho salmon (*Oncorhynchus kisutch*)
Lower Columbia River ESU Steelhead (*Oncorhynchus mykiss*)

2. The sampling schedule, including locations and dates if available. Be as specific as possible. Locations should be listed from general to most specific, including bodies of water, rivers, tributaries, streams or creeks, and a geographical descriptor (e.g., Columbia River, Snake River, Imnaha River, River Mile 42 or Gulf of Mexico, Louisiana Coast, Sabine Pass). Include latitude/longitude coordinates, if possible.

The proposed activities occur within watersheds located in Lewis and Pierce Counties. Specifically, we intend to sample in portions of the following watersheds: Carbon, Nisqually, Ohanepecosh, Huckleberry Creek, and White River Basins. Sampling may occur from the National Park boundary to the uppermost accessible portions of each drainage. Only (2) of the rivers mentioned above will be surveyed in a given year, and frequency of sampling will be up to 3 days/river/year.

3. A description of the recent status and trends of each species and/or population and/or ESU to be taken, relative to the location(s) or area(s) of taking. (Include citations if available).

Puget Sound Chinook are listed as threatened. We are unaware of the current status of populations near Mount Rainier. We are aware that Chinook salmon may be passed upstream of dams on the White River, and Chinook fry have been observed inside the national park.

4. A description and/or completed summary table (see attached example) of estimated take per annual period, for your activities at each discrete location and/or for each project. Please separate take information into "species profiles"– groups of individuals with the same characteristics that will be undergoing the same procedures (see b-h below). Make sure you do not double-count-- if you propose to capture 50 animals, and tag 5 of those, you should list 45 animals to be captured, and 5 to be captured & tagged. Each "species profile" should include:
   a. Number of individuals; Up to 20 chinook per river, per year.
   b. Species and/or population and/or ESU; Puget Sound Chinook
   c. Life stage (such as post-hatchling, fry, smolt, juvenile, immature, adult, etc. (note if live or dead)) Most likely fry.
   d. Sex (if known); Unknown
   e. Origin (if applicable, naturally-produced (wild) or artificially-propagated (hatchery)); wild and presumably hatchery.
   f. Take activity category (such as observe/harass; capture and handle; etc.); capture and handle.
   g. Location (if more specific than the project as a whole); Near park boundary of rivers mentioned above.

h. Date(s) (if more specific than the project as a whole). Summer, 2006-2010.

Anticipated Annual Take

Please use this or a similar table to specify anticipated types and numerical estimates of annual take for listed species during individual research or enhancement activities. Please use a separate table for each discrete project or location. Be sure to group take profiles so that when added up it equals the total number for which take is requested. For example, if you request to capture 50 green turtles, and you wish to attach transmitters to 5 of them, enter 45 green turtles for capture, handle, and release, and 5 for capture. handle, attach transmitter, and release.

Applicant: Steve Corbett

Location/Project: Survey of fish species and populations that inhabit selected systems within Mount Rainier National Park.

Number of individuals	Species and/or Population and/or ESU	Life Stage[1]	Sex[2]	Origin[3]	Take Activity Category[4]	Location[5]	Date(s)[6]
40	***Oncorhynchus tschawytchsa*** **Puget Sound ESU**	**Fry**	**N/A**	**Hatchery and Wild**	**Capture, measure, release**	**WA, Mount Rainier National Park**	**June 1-October 1**
40	***Oncorhynchus tschawytchsa*** **Lower Columbia River ESU**	**Fry**	**N/A**	**Hatchery and Wild**	**Capture, measure, release**	**WA, Mount Rainier National Park**	**June 1-October 1**
40	***Oncorhynchus kisutch*** **Lower Columbia River ESU**	**Fry**	**N/A**	**Hatchery and Wild**	**Capture, measure, release**	**WA, Mount Rainier National Park**	**June 1-October 1**
40	***Oncorhynchus mykiss*** **Lower Columbia River ESU**	**Fry**	**N/A**	**Hatchery and Wild**	**Capture, measure, release**	**WA, Mount Rainier National Park**	**June 1-October 1**

1. Such as: post-hatchling, fry, smolt, juvenile, immature, adult, etc. (also note if live or dead)
2. If known
3. If applicable, note if the species to be taken are naturally-produced (wild) or artificially-propagated (hatchery).
4. Such as observe/harass; collect for transport (including rescue/salvage); capture, handle, and release; capture, handle, tag, mark, tissue sample, and/or other invasive procedure, and release; intentional lethal take (direct mortality); unintentional lethal take (indirect mortality); removal (e.g.,

for broodstock collection); Other take (specify).

5. If more specific than project as a whole.
6. If more specific than project as a whole.

5. Estimates of potential annual mortalities by take category, including a justification. You should specify the life stage of the potential mortalities, sex if known, and whether naturally-produced (wild) or artificially-propagated (hatchery). Mortality estimates should be specific by population; by the activity causing the mortality; and/or by location when known. You should specify whether mortalities will be intentional (direct mortality) or unintentional (indirect mortality).

Methods employed in this study may incidentally injure or kill Chinook salmon and steelhead. (e.g. electrofishing.) The goal is to achieve zero mortality and no injuries to Chinook salmon and steelhead.

6. Provide details on how all take estimates, including mortalities, were derived. Include citations when applicable.

We will encounter up to 20 Chinook fry per river per year. We intend to sample two rivers per year, and up to 40 Chinook per year may be captured, handled, and safely released.

I. Transportation and Holding

1. **Transportation of a Listed Species:** Provide a description of how any live individuals taken from the capture site or other facility (including rescue and relocation activities) will be transported including:

N/A

a. Mode of transportation and name of transportation company, if applicable.

b. Length of time in transit for the transfer of the individual(s) from the capture site to the holding facility or to the target location.

c. Length of time in transit for any planned future move/transfer of the individual(s).

d. The qualifications of the common carrier or agent used for transportation of the individual(s).

e. A description of the pen, tank, container, cage, cradle, or other devices used, both to hold the individual(s) at the capture site and during transportation.

f. Special care before, during and after transportation (e.g., use of oxygen, temperature control, anesthetics, antibiotics, etc.)

2. **Holding of a Listed Species:** Describe the plan for care and maintenance of any live individuals, including a complete description of the facilities where any such individuals will be maintained including:

N/A

a. The dimensions of the pool(s) or other holding facilities and the number of individuals, by sex, age, and species, to be held in each.

b. The water supply, amount, and quality, including controls on temperature and dissolved oxygen.

c. The amount and type of diet used for all individuals, and food storage.

d. Sanitation practices used.

3. **Emergency contingencies**: Identify emergency contingencies- e.g., backup life support systems, alarm systems, redundant water and oxygen supply, release or destroy decision chains, etc.

N/A

J. **Cooperative Breeding Program:** You must include a statement of willingness to participate in a cooperative breeding program and to maintain or contribute data to a breeding program, if such action is requested.

N/A

K. **Previous or Concurrent Activities Involving Listed Species**:

1. Identify all previous permits where you were the permit holder or primary investigator working with federally-listed species. Please identify which species.

United States Fish and Wildlife Service TE-048795.
Bull trout
(*Salvelinus confluentus*)

2. For the above permits, please list all mortality events of listed species which have occurred in the last five years.

No mortality has occurred.

a. List the species, including scientific name and population where applicable;

Bull trout
(*Salvelinus confluentus*)
Coastal-Puget Sound Distinct Population Segment.

b. Describe the number and causes of mortalities; and

No mortality has occurred.

c. Describe the measures that have been taken to diminish or eliminate such mortalities, and the effectiveness of those measures.

L. **Certification:** You must include the following paragraph, exactly as worded, followed by the applicant or responsible party's name, position title, signature and date:

"I hereby certify that the foregoing information is complete, true and correct to the best of my knowledge and belief. I understand this information is submitted for the purpose of obtaining a permit under the Endangered Species Act of 1973 (ESA) and regulations promulgated thereunder,

and that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001, or to penalties under the ESA."

Signature Date

Name and Position Title

Steve Corbett
Fishery Biologist
Olympic National Park
600 East Park Avenue
Port Angeles WA 98362
(360) 565-3086
Steve_Corbett@nps.gov